

CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 - 31. Cancelled.

32 (Previously Presented). The non-naturally occurring AAV according to claim 59, which comprises a minigene having AAV inverted terminal repeats and a heterologous gene operably linked to regulatory sequences which direct its expression in a host cell.

Claims 33 – 42. Cancelled.

43 (Previously Presented). A composition comprising the non-naturally occurring AAV according to claim 59 and a physiologically compatible carrier.

Claim 44. Cancelled.

45 (Previously Presented). A method of delivering a transgene to a cell, said method comprising the step of contacting the cell with a non-naturally occurring AAV according to claim 59, wherein said rAAV comprises the transgene.

Claims 46 – 58. Cancelled.

59 (Previously Presented). A non-naturally occurring adeno-associated virus (AAV) comprising an AAV9 capsid, wherein the AAV9 capsid is at least 95% identical to the amino acid sequence of SEQ ID NO: 123 over amino acids 1 to 736.

60 (Previously Presented). A non-naturally occurring adeno-associated virus (AAV) comprising an AAV9 capsid, wherein the AAV9 capsid comprises an AAV9 capsid protein selected from the group consisting of:

vp1 capsid protein, amino acids (aa) 1 to 736, SEQ ID NO:123;
vp2 capsid protein, aa 138 to 736, SEQ ID NO: 123 ; and
vp3 capsid protein, aa 203 to 736, SEQ ID NO: 123.

61 (Previously Presented). The non-naturally occurring adeno-associated virus (AAV) according to claim 60, wherein the AAV9 capsid protein is encoded by a nucleic acid sequence selected from the group consisting of:

vp1, nucleotides (nt) 1 to 2211;
vp2, nt 411 to 2211; and
vp 3, nt 609 to 2211;

wherein the nucleotides numbers are of AAV9, SEQ ID NO: 3.

62 (Previously Presented). A composition comprising a non-naturally occurring AAV according to claim 60 and a physiologically compatible carrier.

63 (Previously Presented). A method of delivering a transgene to a cell, said method comprising the step of contacting the cell with a AAV according to claim 65, wherein said minigene comprises the transgene.

64 (Previously Presented). The method according to claim 63, wherein the transgene is selected from the group consisting of: low density lipoprotein (LDL) receptor, high density lipoprotein (HDL) receptor, the very low density lipoprotein (VLDL) receptor and a scavenger receptor.

65 (Previously Presented). An adeno-associated virus (AAV) comprising an AAV9 capsid, wherein the AAV9 capsid is at least 95% identical to the amino acid sequence of SEQ ID NO: 123 over amino acids 203 to 736 and wherein said AAV further comprises a minigene having AAV inverted terminal repeats and the heterologous gene operably linked to regulatory sequences which direct its expression in an host cell.

66 (Previously Presented). The adeno-associated virus according to claim 65 wherein the AAV capsid is at least 95% identical to the amino acid sequence of SEQ ID NO: 123 over amino acids 203 to 736 and at least 90% identical to the amino acid sequence of SEQ ID NO: 123 over amino acids 1 to 736.

67 (New). An artificial adeno-associated virus (AAV) capsid protein comprising one or more of the AAV9/HU.14 capsid protein fragments selected from the group consisting of: aa25-28; aa137-143; aa154-156; aa171-173; aa182-186; aa185-198; aa260-273; aa262-264; aa261-274; aa262-274; aa381-383; and aa670-706, fused to one or more AAV capsid protein fragments from one or more different AAVs.

68 (New). The AAV capsid protein according to claim 67, wherein one of the AAV protein fragments is from AAV2.

69 (New). The AAV capsid protein according to claim 67, wherein the AAV9/HU.14 capsid protein fragments comprise aa185-198; aa260-273; aa381-383; and aa670-706.